

**The Hawaiian parthenopid crabs of the genera  
*Garthambrus* Ng, 1996, and *Dairoides* Stebbing, 1920  
(Crustacea: Decapoda: Brachyura)**

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*Abstract.*—The taxonomy of four species of deep-water parthenopid crabs, *Garthambrus stellata* (Rathbun, 1906), *G. lacunosa* (Rathbun, 1906), *G. complanata* (Rathbun, 1906) and *Dairoides kusei* (Sakai, 1938) from Hawaii is treated. *Dairoides kusei* is recorded from Hawaii for the first time. The identities of *G. stellata*, *G. lacunosa* and *G. complanata* are clarified, with detailed comparisons and figures provided. Despite earlier reports, there are no intermediates between these three species. A key to the genus *Garthambrus* is provided.

Rathbun (1906), in her treatment of the Hawaiian Brachyura, had originally recognized eight parthenopid species from these islands. One species, *Harrovia truncata* Rathbun, 1906, was transferred to a separate genus (*Cyrtocarcinus* Ng & Chia, 1994) in the Xanthidae by Ng & Chia (1994). Another species, *Parthenope (Platylambrus) stellata* Rathbun, 1906, was originally established with three subspecies, *P. (P.) stellata stellata*, *P. (P.) stellata lacunosa* Rathbun, 1906, and *P. (P.) stellata complanata* Rathbun, 1906. Garth (1993) reappraised the validity of these three taxa and regarded them as distinct species. He briefly commented that the features used by Rathbun (1906) to separate the three varieties were good species characters. Although Garth examined the type series of all three taxa, he did not comment much about them or figure any of the types. This despite the fact that one taxon, *P. (P.) complanata*, had never been figured before. Nor did he comment on specimens which Rathbun (1906) had regarded as being intermediate between the three species. In describing a new species (*Parthenope cidaris*) from Australia, Garth & Davie (1995) pro-

vided photographs of the types of *P. (P.) stellata*, *P. (P.) lacunosa* and *P. (P.) complanata* but did not make any additional comments other than again stating briefly that all three taxa were good species.

Sakai (1938, 1976) had commented that *P. (P.) lacunosa* (as a subspecies) was a junior synonym of *Lambrus (Parthenopides) pteromerus* Ortmann, 1893, a species which he transferred to the genus *Tutankhamen* Rathbun, 1925. Garth (1993), however, disagreed, commenting that *P. (P.) lacunosa* lacked the lamellar ridges lining the afferent channels on the carapace found on *Tutankhamen cristatipes* (A. Milne Edwards, 1880), the type and only species of the genus. On the basis of Garth's (1993) redescription of *P. (P.) stellata* and his comments on *P. (P.) lacunosa* and *P. (P.) complanata*, Ng (1996) subsequently transferred all three species to the genus *Garthambrus* Ng, 1996.

Nine species of Parthenopidae are currently known from the Hawaiian islands, *Garthambrus stellata* (Rathbun, 1906), *G. lacunosa* (Rathbun, 1906), *G. complanata* (Rathbun, 1906), *Platylambrus nummifera* (Rathbun, 1906), *Rhinolambrus lamelligera*

(White, 1847), *Aulacolambrus hoplonotus* (Adams & White, 1848), *Aulacolambrus whitei* (A. Milne Edwards, 1878), *Pseudolambrus calappoides* (Adams & White, 1848), and *Daldorfia horrida* (Linnaeus, 1758). The generic classification used here follows that proposed by Ng & Rodríguez (1986) and Ng (1996).

The present paper reports on the deep-water Parthenopidae from Hawaii primarily based on material deposited in the Bernice P. Bishop Museum, Honolulu; and National Museum of Natural History, Smithsonian Institution, Washington, D.C. *Garthambrus stellata*, *G. lacunosa* and *G. complanata* are rediagnosed, and detailed figures of their diagnostic characters provided for the first time. Using new characters identified in this study, the "intermediates" reported by Rathbun (1906) can easily be assigned to the three species. A key to the genus *Garthambrus* is provided. The unusual deep-water species, *Dairoides kusei* (Sakai, 1938), previously known only from Japan, is also reported from Hawaii for the first time.

The terms used here essentially follow those used by Garth (1958, 1993). The abbreviations cw and cl are for the carapace width and length, and G1 and G2 are for the male first and second pleopods respectively. Specimens are deposited in the Bernice P. Bishop Museum, Honolulu (BPBM); National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM); Nationaal Natuurhistorisch Museum, Leiden (ex Rijksmuseum van Natuurlijke Historie, RMNH); and the Zoological Reference Collection, National University of Singapore (ZRC).

#### Systematic Account

##### Genus *Garthambrus* Ng, 1996

*Garthambrus* Ng, 1996: 156 (type species: *Garthambrus posidon* Ng, 1996, by original designation).

*Diagnosis*.—Carapace subtriangular in shape, broader than long; angle between an-

tero- and posterolateral margins strongly produced; dorsal surfaces granulose, spinose or rugose; progastric, mesogastric, metagastric, mesobranchial, metabranchial, cardiac and intestinal regions strongly inflated; gastric and branchial regions separated by deep grooves. Median lobe of rostrum prominent, sub-spatulate, deflexed downwards. Hepatic region and margin separated from anterolateral margin by cleft, notch or large tubercle. Posterolateral margin and metabranchial regions without long or prominent teeth or spines. Chelipeds at least 2.5 times carapace length. G1 relatively stout, not armed with long spines or stiff hairs. Distal segment of G2 elongate, subequal to or distinctly longer than basal segment (modified from Ng 1996: 156).

*Remarks*.—Ng (1996) removed a number of species previously assigned to *Parthenope*, *Platylambrus* or *Parthenope* (*Platylambrus*) to a separate genus which he characterised by their triangular carapaces and long distal segment of the second male pleopod. All eight species (see key) currently placed in *Garthambrus* are essentially deep-water species.

One unusual species which requires mention is the Japanese species *Parthenope pteromerus* (Ortmann, 1893). It is very similar in appearance to *G. lacunosa*, which Sakai (1976) synonymised under *P. pteromerus*. Sakai (1976) also transferred *P. pteromerus* to the genus *Tutankhamen* Rathbun, 1925, arguing that the afferent respiratory channels on its carapace are lined with lamellar ridges. Garth (1993) refuted this synonymy because *G. lacunosa* and all *Garthambrus* species do not have such lamellar ridges. Subsequently, Ng (1996) suggested that *P. pteromerus* was not assignable to *Tutankhamen*, and probably belonged in a separate genus. While *P. pteromerus* resembles many *Garthambrus* species superficially, the possession of lamellar ridges lining the afferent respiratory channels on its carapace argues against its inclusion in *Garthambrus* as presently de-

fined. *Parthenope pteromerus* is also a relatively shallow-water species compared to known species of *Garthambrus* (unpublished data).

Key to *Garthambrus* species

- 1a. Carapace and legs covered with numerous long, sharp spines; margin of branchial region with deep, distinct cleft . . . . . *G. mironovoi*
- 1b. Carapace and legs not covered with numerous long, sharp spines; margin of branchial region entire or almost so . . . . . 2
- 2a. Granules on branchial, cardiac and gastric regions of carapace fused to various degrees forming distinct granular patches . . . . . *G. allisoni*
- 2b. Carapace dorsal surface almost smooth or if granules present, those on branchial, cardiac and gastric regions never distinctly fused . . . . . 3
- 3a. Margins of ambulatory meri distinctly cristate . . . . . *G. lacunosa*
- 3b. Margins of ambulatory meri not distinctly cristate, but lined with spines, teeth or granules . . . . . 4
- 4a. Carapace and cheliped surfaces without pits or lacunae . . . . . *G. complanata*
- 4b. Carapace and cheliped surfaces with distinct pits and/or lacunae . . . . . 5
- 5a. Margins of ambulatory meri with prominent rounded granules . . . . . 6
- 5b. Margins of ambulatory meri with uneven granules, tubercles or small spines . . . . . 7
- 6a. Median protuberance of rostrum large, margins of ambulatory propodi and carpi distinctly granulated . . . . . *G. poupini*
- 6b. Median protuberance of rostrum small, margins of ambulatory propodi and carpi smooth, unarmed . . . . . *G. posidon*
- 7a. Dorsal surface of carapace densely granulated all over; metabranchial regions strongly swollen, appears peak-like from frontal view . . . . . *G. stellata*
- 7b. Dorsal surface of carapace with rugae and granules but never densely packed; metabranchial regions high but not very swollen, not peak-like from frontal view . . . . . *G. cidaris*

*Garthambrus stellata* (Rathbun, 1906)  
(Figs. 1A–D, 6A–C)

*Parthenope (Platylambrus) stellata* Rathbun, 1906:884 (part), pl. 15 Figs. 1, 2.—Garth, 1993:786, Figs. 3, 4.

*Parthenope (Platylambrus) stellatus*.—Serène, 1968:60.

*Parthenope stellata*.—Garth & Davie, 1995:225, Fig. 2B.

*Garthambrus stellata*.—Ng, 1996:158.

*Material examined*.—Holotype, 1 male, cw 48.6 mm, cl 32.8 mm (USNM 29839), south coast of Oahu Island, Hawaii, 435–461 m, station 3811, coll. Albatross Expedition, 27 Mar 1902. Paratype, 1 male, cw 32.9 mm, cl 23.1 mm (USNM 29840), Kawaihae, Hawaii Island, Hawaii, 20°01'45"N 155°54'15"W, 269–362 m, station 4045, 8 hemp tangles gear, coll. Albatross Expedition, 11 Jul 1902. Others—1 female (USNM 239148), Pearl Harbor, Mamala Bay, Oahu Island, Hawaii, disposal site, 21°16'48"N 157°56'30"W, 366 m, coll. R/V Hurl, 30 Apr 1983. 1 male, cw 70.2 mm, cl 45.6 mm (ZRC 1997.441), Off Pearl Harbor, Oahu Island, Hawaii, station 82-105, in dredge spoil site, on sediment bottom in vicinity of outcrop, 366 m, coll. R/V Hurl, Makali'i Dive, D. M. Devaney & B. Bartko, 1 Sep 1982. 1 female (carapace only) (BPBM 1978.417), Off Makupuu Point, Molokai Channel, Hawaii, 12 km straight east, 21°02'N 157°32'W, coll. Valkryrien, Capt. S. Rayner, 20 May 1967. 1 male, ca. cw 65.5 mm, cl 43.4 mm (left edge of carapace broken) (BPBM 1976.259), Entrance to Pearl Harbor, Oahu Island, Hawaii, 2.5 km off buoy 1,338 m, coll. in shrimp traps, Easy Rider, E. H. Chave, 27 Sep 1976. 2 females, cw 21.6 mm, cl 16.5 mm, ca. cw 16.0 mm, cl 12.5 mm (right side of carapace crushed) (BPBM 5508), Oahu Island, 1.9 km off Kahala, Hawaii, 46 m, coll. Brock, 14 Apr 1949.

*Diagnosis*.—Surface of carapace densely and granulated uniformly throughout, including grooves and depressions; metabranchial regions strongly swollen, appearing

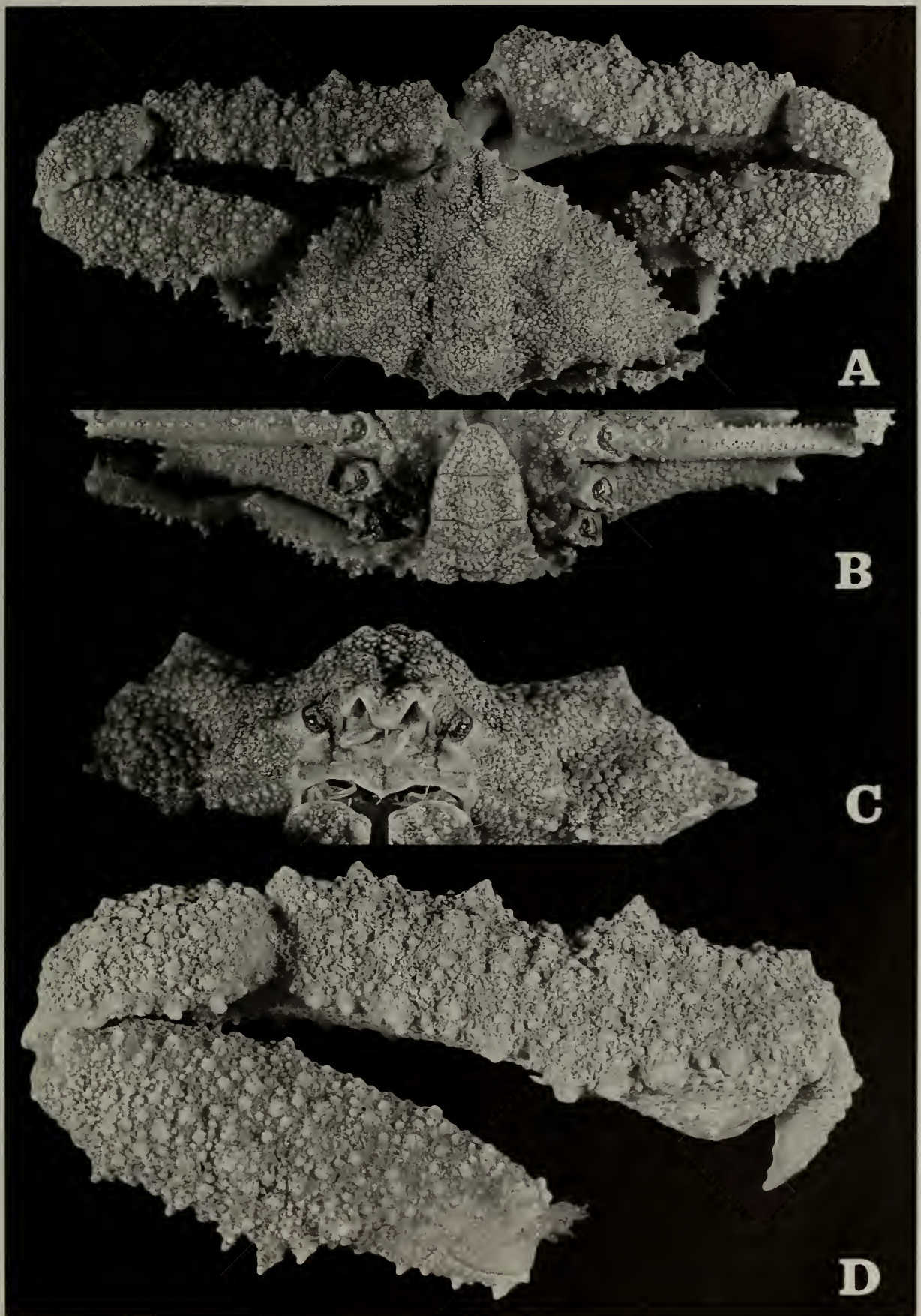


Fig. 1. *Garthambrus stellata* (Rathbun, 1906). Holotype male (48.6 by 32.8 mm) (USNM 29839). A, Carapace; B, Abdomen; C, Front; D, Left chela.

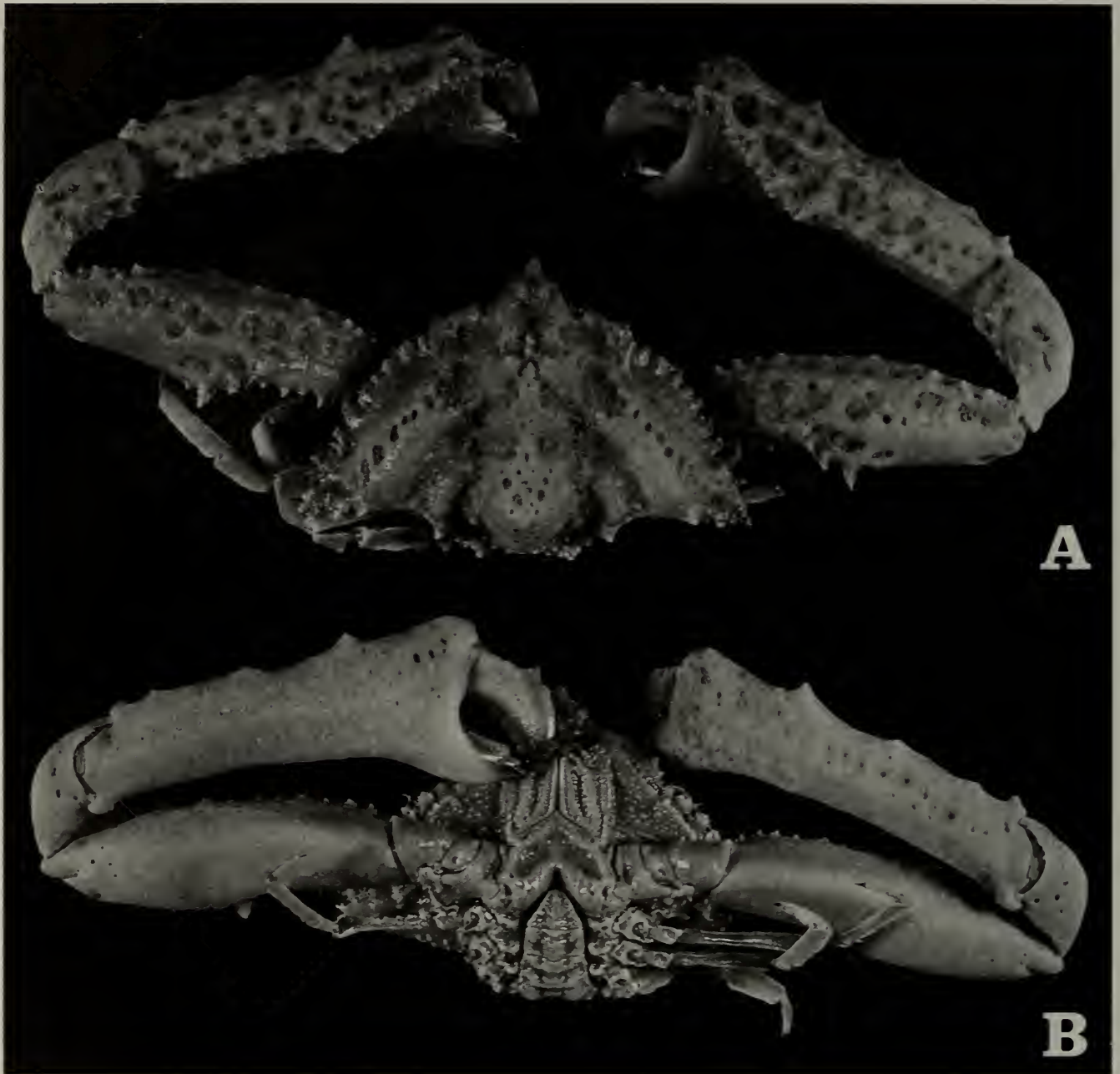


Fig. 2. *Garthambrus lacunosa* (Rathbun, 1906). Holotype male (30.9 by 21.8 mm) (USNM 29842). A, Carapace; B, Abdomen.

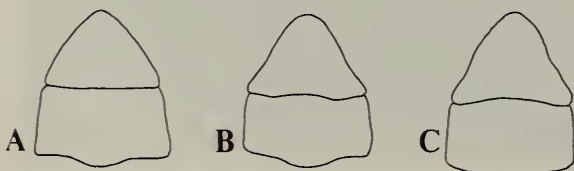


Fig. 3. Male telson and sixth abdominal segment. A, *Garthambrus stellata*, holotype male (USNM 29839); B, *Garthambrus lacunosa*, holotype male (USNM 29842). C, *Garthambrus lacunosa*, male (USNM 29842b).

peak-like in frontal view (Fig. 1C), highest point with sharp granule; sub-branchial, suborbital, subhepatic and branchiostegal regions distinct, densely covered with distinct small granules. Anterolateral margin with sharp, acutely triangular teeth, lateral margins of teeth with numerous accessory spinules and/or small, sharp granules. Cheliped surfaces (especially merus, carpus, propodus and dactylus) with well developed sharp spines, spinules and granules (Fig. 1D); merus with oblique ridge of strong spines about  $\frac{1}{3}$  from proximal end;

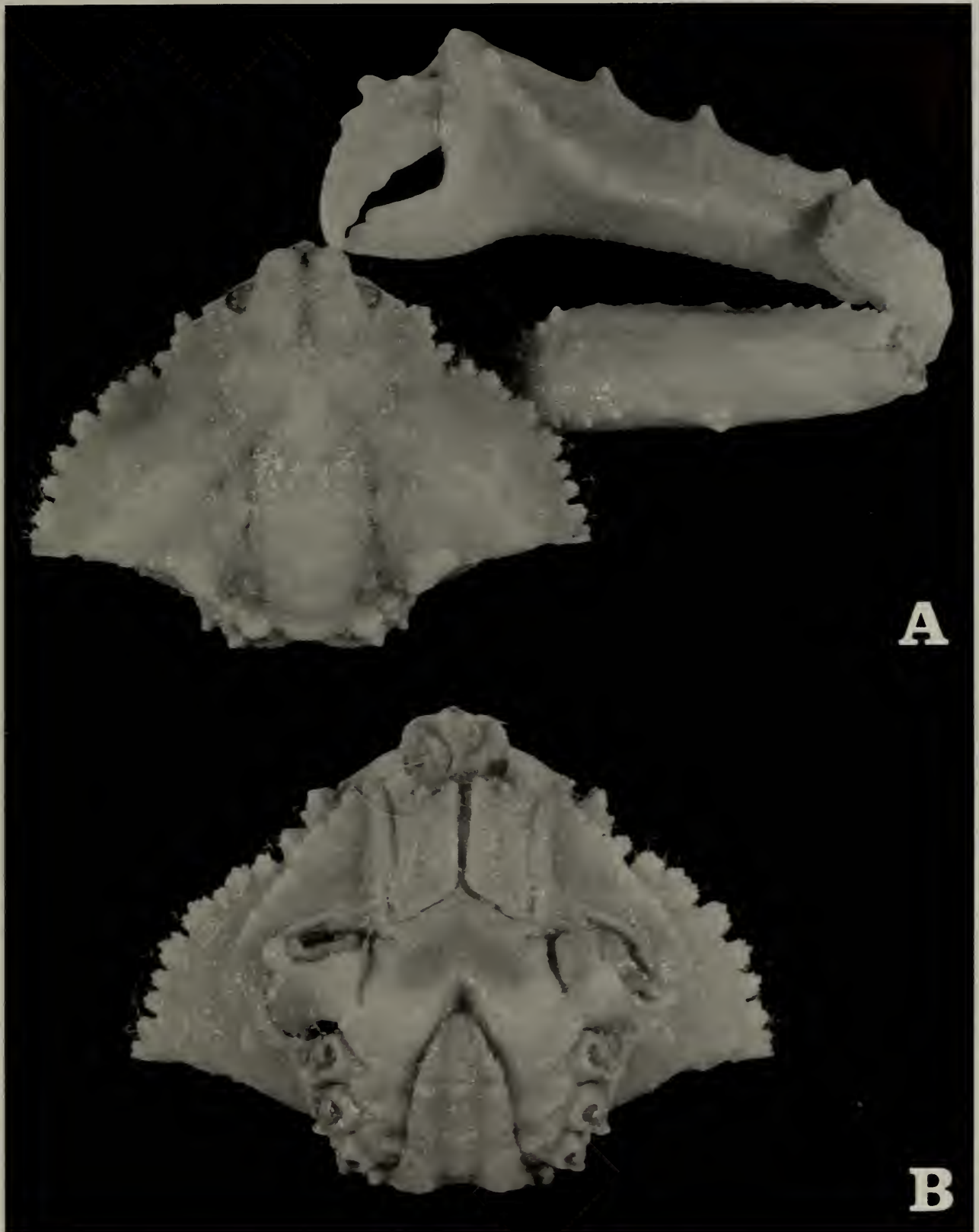


Fig. 4. *Garthambrus complanata* (Rathbun, 1906). Lectotype male (17.3 by 12.7 mm) (USNM 29845a). A, Carapace; B, Abdomen.

surfaces never with pits or lacunae. Margins of ambulatory legs unevenly cristate to dentate, with numerous accessory spinules; surfaces densely covered with small granules, never with pits or lacunae. Anterior thoracic

sternites densely covered with small granules, without pits or lacunae (Fig. 1B). Abdominal surfaces densely covered with small granules, never with pits or lacunae; lateral margins of male telson gently con-

vex. G1 relatively slender, tip distinctly turned inwards towards median part of thoracic sternum.

*Remarks.*—Rathbun (1906) described *Parthenope stellata* on the basis of ten specimens from various parts of Hawaii. In her discussion on variation within the species, however, she noted that only two specimens conformed with *P. stellata* sensu stricto, and the other eight specimens appeared to belong to two other varieties or were intermediate in form (see discussion for next two species). One specimen (USNM 29839) was designated as the “type” (= holotype) of *P. stellata*. However, Rathbun (1906:884), noted that the smaller specimen (USNM 29840) “. . . shows the tubercles and spines all sharp instead of blunt pointed, and lacks the hair near the ends of the legs.” She regarded this smaller specimen as belonging to the “sharp-spined variety” of *P. stellata* sensu stricto, but did not apply any name. Examination of a relatively good series of specimens has shown that differences noted by Rathbun (1906) between her two type specimens can easily be accounted for by infraspecific variation. Edmondson (1951:213) had reported two small specimens from shallow waters in Hawaii and Ng (1996:159) commented that “. . . his specimens are probably misidentified” as the carapace proportions were different, the rostrum was not trifold and the ambulatory dactylus was more styliform. We have re-examined these two specimens (BPBM 5508), and they are clearly juvenile *G. stellata*. The differences in carapace proportions are almost certainly due to their small size and the ambulatory dactylus is actually not as styliform as depicted in Edmondson’s (1951:Fig. 18d) illustration. The bifid rostrum shown for the specimen figured by Edmondson (1951:Fig. 18a) is such because the median lobe is broken. In the other specimen, the rostrum is clearly trifold.

The relatively good series of specimens of various sizes and sexes shows that the characters identified here are consistent and

are useful for defining this species. The G1 shows slight variation, in that the distal part may appear slightly more flared or slightly more bent inwards (towards the median part of the thoracic sternum). The density of the granules does not change much with growth. However, with an increase in size, the individual granules do become larger, more prominent and distinctly more stellate in structure.

*Garthambrus stellata* is known from Hawaii, Tuamotu and Taiwan (Garth 1992, Poupin 1996:32, Tan et al. 1999). In Hawaii, the species is recorded up to depths of 461 m, although juveniles have been found in shallower waters of only about 46 m. The record from Tuamotu is of an adult from about 300 m depth. The specimen figured by Poupin (1996: pl. 15f) from Tuamotu is a dirty white overall and speckled with numerous fine brown spots, and the fingers are pigmented brown.

*Garthambrus lacunosa* (Rathbun, 1906)  
(Figs. 2A–B, 3A–C, 6D–F)

*Parthenope (Platylambrus) stellata lacunosa* Rathbun, 1906:884, pl. 15 Fig. 7.

*Parthenope (Platylambrus) lacunosa*.—Garth, 1993:788.

*Parthenope lacunosa*.—Garth & Davie, 1995:226, Fig. 3A.

*Garthambrus lacunosa*.—Ng, 1996:158

*Material examined.*—Holotype, 1 male, cw 30.9 mm, cl 21.8 mm (USNM 29842), Kawaihae, west coast of Hawaii Island, Hawaii, 269–362 m, 20°01′45″N 155°54′15″W, station 4045, 8 hemp tangles gear, coll. Albatross Expedition, 11 Jul 1902. Paratypes, 1 male, cw 30.4 mm, cl 31.6 mm (USNM 29843a), Maui Island, Lipoa Point, Pailolo Channel, Hawaii, 238–276 m, 21°05′30″N 156°40′30″W, station 4100, 8 hemp tangles gear, coll. Albatross Expedition, 23 Jul 1902, (1 other paratype male specimen transferred to Stanford University according to labels, not examined). 1 female (USNM 29844), northwest coast of Oahu Island, Hawaii, 282–357 m, coll. Al-

batross Expedition. 1 female, cw 30.2 mm, cl 21.3 mm (USNM 29841), south coast of Molokai Island, Hawaii, off Lae-O-Ka Laau Lighthouse, 309–333 m, 64°00'N 00°13'42"W, station 3835, coll. Albatross Expedition, 3 Apr 1902. Others—1 male, cw 31.4 mm, cl 21.5 mm (USNM 29843b), Maui Island, Lipoa Point, Pailolo Channel, Hawaii, 238–276 m, 21°05'30"N 156°40'30"W, station 4100, 8 hemp tangles gear, coll. Albatross Expedition, 23 Jul 1902.

*Diagnosis.*—Surface of carapace slightly rugose, with scattered to relatively numerous granules; metabranchial regions moderately raised but not strongly swollen, not peak-like from frontal view, highest point unarmed; sub-branchial, suborbital, subhepatic and branchiostegal regions distinct, covered with numerous but scattered small granules. Anterolateral margin with lobi-form to truncate teeth, lateral margins of teeth lined with numerous accessory spinules or small, sharp granules especially along anterior margin. Outer surfaces of chelipeds (especially merus, carpus, propodus and dactylus) with well developed spines, spinules and granules; merus with oblique ridge of strong spines about  $\frac{1}{3}$  from proximal end; outer surfaces with numerous pits, often with well developed lacunae. Margins of ambulatory legs distinctly cristate, entire to uneven; surfaces almost smooth or with very small, scattered granules, usually with distinct pits and/or lacunae. Anterior thoracic sternites with numerous scattered small granules and pits, often with lacunae. Abdominal surfaces covered with numerous scattered small granules and pits, often with lacunae; lateral margins of male telson concave. G1 relatively slender, tip turning slightly inwards towards median part of thoracic sternum.

*Remarks.*—Rathbun (1906) regarded five specimens of the original nine specimens of *Parthenope* (*Platylambrus*) *stellata* belonging to a separate variety *P. (P.) stellata lacunosa*. She has also mentioned that the differences of these five specimens are so dif-

ferent from the type specimen of *G. stellata*, that they could be a different species altogether and she mentioned several characters: "The branchio-cardiac depression is deep, and another depression runs along the outer side of the branchial region, adjacent to the marginal teeth. The elevated part of this region has a row of large pits through its middle, and similar line of pits dividing the gastric region in three and roughening the chelipeds. The granules are in large part confluent and thus obliterated, especially on the higher parts of the carapace and the chelipeds. The legs have smooth surfaces, thin cristate margins which are somewhat crenate or dentate in the merus and are destitute of long hair. Along with two of this variety from station 4100 is one which is intermediate between the typical (*P. stellata stellata*) and varietal form (*P. stellata lacunosa*), the stellate granules being everywhere fairly well shown, and also the lines of pits." (Rathbun, 1906:884).

One of the original nine type specimens of *Garthambrus stellata* was considered as intermediate between *P. stellata* and *P. lacunosa*. This specimen (USNM 29843b) is similar to *P. stellata* sensu stricto in having smaller granules overall, even on the carapace depressions and grooves, compared to typical *P. lacunosa*. The lacunae on the carapace and chelipeds are also smaller and less developed. A close examination of this supposedly intermediate specimen, however, shows that it only represents the extreme end of the variation in *P. lacunosa*. In the presence of lacunae on the carapace and chelipeds, truncate anterolateral teeth, distinctly cristate ambulatory meri, low, non-peaked metabranchial regions which lack a sharp median granule and gently concave male telson (Fig. 3C), the specimen clearly represents *P. lacunosa*. Even though this specimen is more granulated than typical *P. lacunosa*, it is still much less granulated overall compared to any specimen of *P. stellata* sensu stricto we have examined, even specimens of similar sizes.

Rathbun (1906) identified one specimen



(USNM 29842) as the "type" (= holotype) of *Garthambrus lacunosa*. The other four specimens listed by Rathbun (1906) are thus paratypes. The supposedly intermediate specimen (USNM 29843b) was not regarded as belonging to *P. (P.) stellata lacunosa* by Rathbun (1906) when she originally named the taxon, and thus, is not part of the type series.

*Garthambrus complanata* (Rathbun, 1906)  
(Figs. 4A–B, 6G–I)

*Parthenope (Platylambrus) stellata complanata* Rathbun, 1906:884.

*Parthenope (Platylambrus) stellata complanata* Serène, 1968:60.

*Parthenope (Platylambrus) complanata*.—Garth, 1993:789.

*Parthenope complanata*.—Garth & Davie, 1995:226, Fig. 3B.

*Garthambrus complanata*.—Ng, 1996:158.

*Material examined*.—Lectotype, herein designated, 1 male, cw 17.3, cl 12.7 mm (USNM 29845a), Hanamaulu Bay, Kauai Island, Hawaii, 470–570 m, 22°01'30"N 150°21'10"W, station 4132, 8 foot Blake Beam trawl gear, coll. Albatross Expedition, 1 Aug 1902. Paralectotype, 1 male (USNM 29845b), same data as lectotype.

*Diagnosis*.—Surface of carapace smooth to gently rugose, not granulated; metabranchial regions raised but not strongly swollen, not peak-like from frontal view, highest point unarmed; sub-branchial, suborbital, subhepatic and branchiostegal regions distinct but almost smooth except for a few scattered granules. Anterolateral margin with liboform to truncate teeth, lateral margins of teeth lined with scattered accessory spinules or small, sharp granules especially along anterior margin. Surface of chelipeds (especially merus, carpus, propodus and dactylus) with few, scattered granules, but with distinct simple spines; merus without distinct oblique ridge of spines; surfaces with few, scattered simple granules. Margins of ambulatory legs smooth, not cristate but with well spaced spines and/or teeth;

surfaces smooth, without lacunae. Anterior thoracic sternites almost smooth, without pits or lacunae. Abdominal surfaces almost smooth, without pits or lacunae; lateral margins of male telson concave. G1 relatively stout, straight.

*Remarks*.—For her third variety of *P. (P.) stellata*, Rathbun (1906:884) noted that "Still a third type seems worthy of a distinguishing name, *P. (P.) stellata complanata*. It differs from the type of *P. (P.) stellata stellata* in the surface of carapace and chelipeds being smooth to the naked eye, though under the lens finely punctate and roughened; the tubercle or spine at the inner third of the postero-lateral margin is represented by a triangular nodule; tubercle at each end of posterior margin large and round; antero-lateral teeth broader and more dentiform than in other forms; no teeth nor spines at outer end of postero-lateral margin, but a nodule on the dorsal surface at that point may represent them; marginal spines of chelipeds inclining to sharp; legs approaching the type in roughness; margins prominently spinate, without long hair." Most of these differences are valid, and *G. complanata* can easily be separated from congeners by the carapace sculpturation, armature of the antero-lateral margin, absence of an oblique ridge on the relatively smooth merus of the cheliped, structure of the ambulatory merus, and form of the thoracic sternites and abdominal surface.

Garth & Davie (1995:Fig. 3B) provided a photograph of the "holotype" of this species, but no measurements were provided. However, Rathbun (1906) listed two male specimens (USNM 29845a) only as "types" without designating a holotype; thus, both are syntypes. Garth (1993) had earlier examined both specimens and listed them as syntypes. The larger specimen (17.3 by 12.7 mm) (USNM 29845a) in better condition, is here designated as the lectotype. It is the same specimen figured by Garth & Davie (1995).



Fig. 5. *Dairoides kusei* (Sakai, 1938). 1 male (52.2 by 47.3 mm) (ZRC 1997.447).

Genus *Dairoides* Stebbing, 1920

*Dairoides* Stebbing, 1920:233 (type species: *Dairoides margaritus* Stebbing, 1920, by monotypy).

*Asterolambrus* Sakai, 1938:341 (type species: *Asterolambrus kusei* Sakai, 1938, by monotypy).

*Remarks.*—Sakai (1938) established *Asterolambrus* for a new species from Japan, *A. kusei*. Sakai (1965) later synonymised *Asterolambrus* under *Dairoides* Stebbing, 1920, which had been established for *D. margaritus* Stebbing, 1920, a species known only from South Africa. Takeda & Ananongsuk (1991) subsequently described a third species, *D. seafdeci*, from the Andaman Sea in the Indian Ocean.

*Dairoides kusei* (Sakai, 1938)  
(Figs. 5, 6 J–L)

*Asterolambrus kusei* Sakai, 1938:341, pl. 41 Figs. 5, 6.

*Dairoides kusei.*—Sakai, 1965:99, pl. 45 Fig. 2.—Sakai, 1976:288, pl. 97 Figs. 1, 2.

*Material examined.*—1 male, 2 females (BPBM 1980.194), Oahu Island, off Barber's Point, Hawaii, 117–128 m, trapped by gill nets laid overnight, coll. Teritu, T. Clarke, 19–20 Apr 1971. 1 male, cw 52.2 mm, cl 47.3 mm (ZRC 1997.447), Hawaii, coll. E. Bilderback, 17 Jan 1979. 1 male (dried), cw 54.8 mm, cl 44.6 mm (RMNH), Wagu, Kii Peninsula, Mie Prefecture, Japan, coll. N. Yamashita, 1978–79. 2 males, 1 female (RMNH 32004), Wagu, Kii Peninsula, Mie Prefecture, Japan, coll. N. Yamashita, 1978–79.

*Remarks.*—*Dairoides kusei* had previously been reported only from Japanese waters. The specimens reported here agree well with the descriptions and figures of this species by Sakai (1938, 1965, 1976). We have also examined four specimens of *D. kusei* from Japan in the RMNH donated

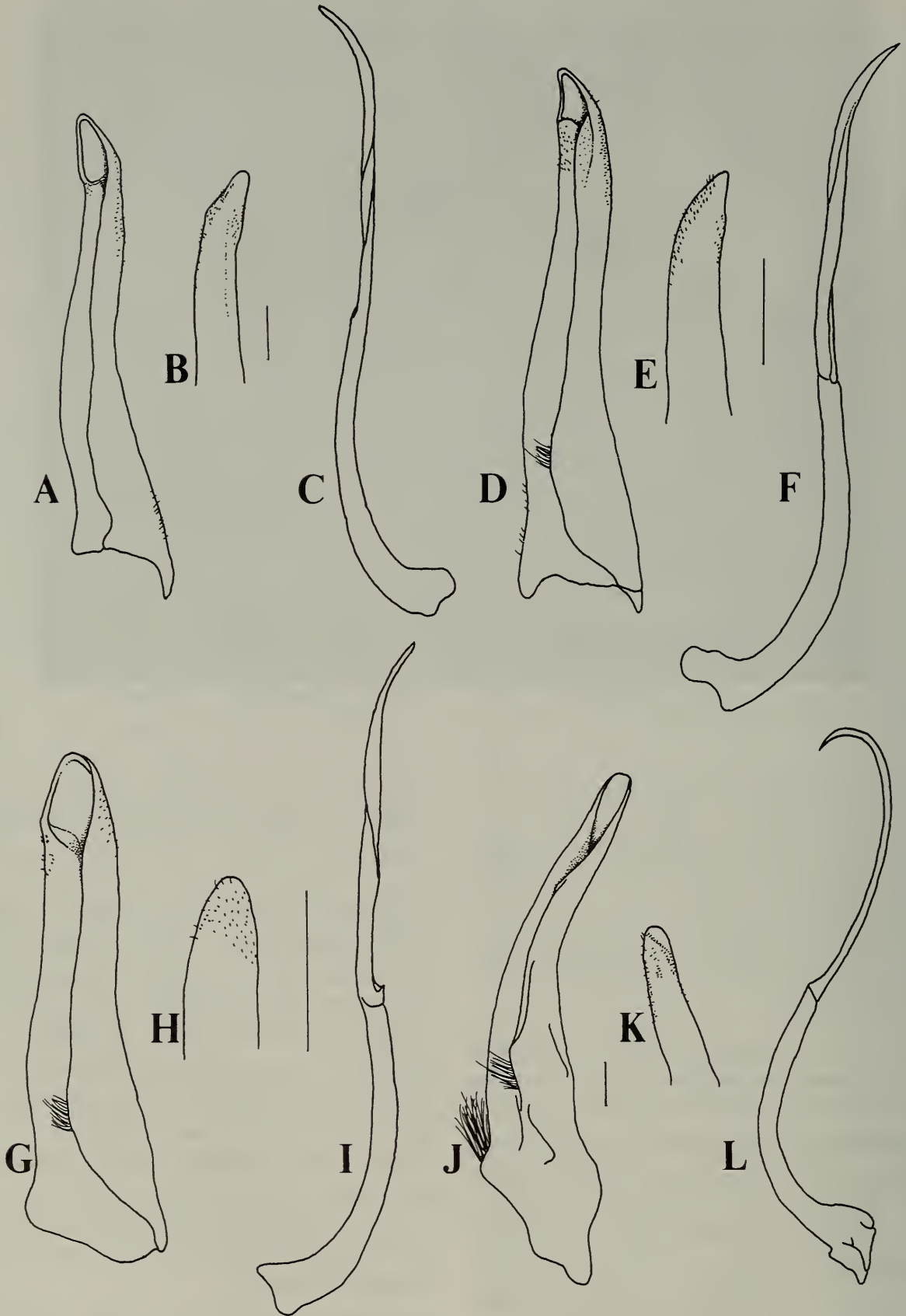


Fig. 6. Gls. A–C, *Garthambrus stellata* (Rathbun, 1906), holotype male (48.6 by 32.8 mm) (USNM 29839); D–F, *G. lacunosa* (Rathbun, 1906), holotype male (30.9 by 21.8 mm) (USNM 29842); G–I, *G. complanata* (Rathbun, 1906), lectotype male (17.3 by 12.7 mm) (USNM 29845a); J–L, *Dairoides kusei* (Sakai, 1938), 1 male (52.2 by 47.3 mm) (ZRC 1997.447).

by the late Tune Sakai. They agree with the specimens from Hawaii in all major aspects, including the structures of their gonopods.

### Acknowledgments

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